

WHAT IS CLAIMED IS:

1. A reactive probe chip comprises:

a particulate carrier or a tile-like carrier loaded with a reactive probe, and a substrate, wherein said particulate carrier or said tile-like carrier is set on said substrate.

2. A reactive probe chip comprises:

a particulate carrier or a tile-like carrier loaded with a reactive substance which has an ability to bond a detection target, and

a substrate, wherein said particulate carrier or a tile-like carrier is set on said substrate.

3. A reactive probe chip according to claim 1 or claim 2, wherein said particulate carrier is a porous carrier particle.

4. A reactive probe chip according to claim 1 or claim 2, wherein said particulate carrier is of a material with a surface having bonding ability.

5. A reactive probe chip according to claim 4, wherein said particulate particle is selected from a porous glass, silica gel or ion-exchange resin.

6. A reactive probe chip according to claim 1 or claim 2, wherein said substrate is an inorganic or organic substrate.

7. A reactive probe chip according to claim 1, wherein said reactive probe is selected from the group consisting of DNA, RNA and PNA (peptide nucleic acid) and fragments thereof, oligonucleotides of any desired base sequence, antigens, antibodies, epitopes, enzymes, proteins and the polypeptide chains.

8. A reactive probe chip according to claim 2, wherein said reactive substance is selected from the group consisting of DNA, RNA and PNA (peptide nucleic acid) and fragments thereof, oligonucleotides of any desired base sequence, antigens, antibodies, epitopes, enzymes, proteins and the polypeptide chains.

9. A reactive probe chip according to claim 1, wherein said carrier is porous particles, said reactive probe is loaded on the inner surfaces of the porous particle pores.

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and the probe-loaded particles are arrayed and immobilized in at least one of a plurality of microcompartments provided on a base material, while maintaining the reactivity of the inner surfaces of the porous carrier particle pores.

10. A reactive probe chip according to claim 3, wherein the pore size of the porous carrier particles ranges from 10 nm to 1 μ m, and the particle size ranges from 1 μ m to 100 μ m.

11. A reactive probe chip according to claim 1 or claim 2, wherein said carrier is a square or hexagonal or circular plate and has a diameter or a size of from 50 μ m to 5 mm on each side.

12. A method for fabrication of a reactive probe chip which comprises the steps of:

immobilizing a reactive probe on particulate or tile-like carriers, and

arraying and immobilizing each of the loaded carriers in separate compartments on the base material.

13. A method for fabrication of a reactive probe chip according to claim 12, wherein said reactive substance is selected from the group consisting of enzymes, antigens, DNA, RNA and PNA (peptide nucleic acid) and fragments, antibodies, epitopes, proteins and peptides.

14. A method for fabrication of a reactive probe chip according to claim 12, wherein said oligonucleotides or proteins are synthesized on the carriers, and each carrier is arrayed and immobilized in separate compartments on the base material.

15. A method for fabrication of a reactive probe chip according to claim 12, wherein said carrier particles are of a material with a surface having bonding ability, and are selected from such as porous glass, silica gel or ion-exchange resin.

16. A method for fabrication of a reactive probe chip according to claim 12, wherein said carriers are porous carrier particles, and said particles loaded with the reactive probe are arrayed and immobilized using one or

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more same or different particles in at least one of a plurality of microcompartments provided on a base material while maintaining the reactivity of the inner surfaces of the carrier particle pores.

17. A method for fabrication of a reactive probe chip according to claim 16, wherein the pore size of the porous carrier particles ranges from 10 nm to 1 μ m, and the particle size ranges from 1 μ m to 100 μ m.

18. A method for fabrication of a reactive probe chip according to claim 12, wherein the tile-like carriers have a square, hexagonal or circular shape and have a size of from 50 μ m to 5 mm on each side or on diameter, and they are attached to and immobilized on the base material.

19. A method for fabrication of a reactive substance chip which comprises the steps of:

immobilizing a reactive substance which has an ability to bond a detection target on particulate or tile-like carriers, and

arraying and immobilizing each of the loaded carriers in separate compartments on the base material.

20. A method for fabrication of a reactive substance chip according to claim 19, wherein said reactive substance is selected from the group consisting of enzymes, antigens, DNA, RNA and PNA (peptide nucleic acid) and fragments, antibodies, epitopes, proteins and peptides.

21. A method for fabrication of a reactive substance chip according to claim 20, wherein said oligonucleotides or proteins are synthesized on the carriers, and each carrier is arrayed and immobilized in separate compartments on the base material.

22. A method for fabrication of a reactive substance chip according to claim 19, wherein said particulate carriers are of a material with a surface having bonding ability, and are selected from such as porous glass, silica gel or ion-exchange resin.

23. A method for fabrication of a reactive substance chip according to claim 19, wherein said carriers are porous carrier particles, and said particles loaded with the

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reactive substance are arrayed and immobilized using one or more same or different particles in at least one of a plurality of microcompartments provided on a base material while maintaining the reactivity of the inner surfaces of the carrier particle pores.

24. A method for fabrication of a reactive substance chip according to claim 19, wherein the pore size of the porous carrier particles ranges from 10 nm to 1 μ m, and the particle size ranges from 1 μ m to 100 μ m.

25. A method for fabrication of a reactive substance chip according to claim 19, wherein the tile-like carriers have a square, hexagonal or circular shape and have a size of from 50 μ m to 5 mm on each side or on diameter, and they are attached to and immobilized on the base material.

26. A method for fabrication of porous carrier particles loaded with a reactive substance, which comprises synthesizing oligo-nucleotides or proteins on the porous carrier particles by use of a solid phase method.

27. A composite substrate which comprises, on at least a section of the surface thereof, a plurality of porous regions arrayed on and comparted by non-porous regions, or a plurality of non-porous regions arrayed on and comparted by porous regions.

28. A composite substrate according to claim 27, wherein said composite substrate comprising both porous regions and non-porous regions and having a surface flattened by a process such as polishing.

29. A method for fabrication of a composite substrate according to claim 27 wherein the separately formed porous solid is placed on prescribed regions of a non-porous substrate.

30. A method for fabrication of a composite substrate according to claim 27, wherein a porous solid precursor material is placed on prescribed regions of a non-porous substrate and the pores in said porous solid precursors is produced on the base material.

31. A method for fabrication of a composite substrate according to claim 27, wherein a plurality of the porous

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regions is formed in a plurality of predetermined regions on a substrate whose total surface is a porous solid precursor.